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## SEQUENCE LISTING

&lt;110&gt; Scharenberg, Andrew

&lt;120&gt; CHARACTERIZATION OF THE SOC/CRAC CALCIUM CHANNEL PROTEIN FAMILY

&lt;130&gt; B0662/7026/ERP/KA

&lt;140&gt; US 09/869,486

&lt;141&gt; 1999-12-20

&lt;150&gt; US 60/114,220

&lt;151&gt; 1998-12-30

&lt;150&gt; US 60/120,018

&lt;151&gt; 1999-01-29

&lt;150&gt; US 60/140,415

&lt;151&gt; 1999-06-22

&lt;150&gt; PCT/US99/29996

&lt;151&gt; 1999-12-20

&lt;160&gt; 32

&lt;170&gt; PatentIn version 3.0

&lt;210&gt; 1

&lt;211&gt; 1212

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 1

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&lt;213&gt; Homo sapiens

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&lt;223&gt; a, or c, or g, or t

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&lt;223&gt; a, or c, or g, or t

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&lt;223&gt; a, or c, or g, or t

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&lt;212&gt; PRT

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&lt;213&gt; Homo sapiens

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&lt;221&gt; UNSURE

&lt;222&gt; (41)..(41)

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&lt;221&gt; UNSURE

&lt;222&gt; (54)..(54)

&lt;223&gt; any amino acid

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&lt;220&gt;

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&lt;223&gt; a, or c, or g, or t

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 Ala Val Ser Pro Pro Glu Leu Arg Gln Arg Leu His Gly Val Glu Leu  
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 Leu Lys Ile Phe Asn Lys Asn Gln Lys Leu Gly Ser Ser Ser Thr Ser  
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 Ile Pro His Leu Ser Ser Xaa Xaa Xaa Lys Phe Phe Xaa Ser Thr Pro  
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Pro Phe Gly Asn Asn Asp Lys Gln Glu Ser Leu Ser Ser Trp Ile Pro
50         55         60
Glu Asn Ile Lys Lys Lys Glu Cys Val Tyr Phe Val Glu Ser Ser Lys
65         70         75         80
Leu Ser Asp Ala Gly Lys Val Val Cys Gln Cys Gly Tyr Thr His Glu
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Gln His Leu Glu Glu Ala Thr Lys Pro His Thr Phe Gln Gly Thr Gln
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Trp Asp Pro Lys Lys His Val Gln Glu Met Pro Thr Asp Ala Phe Gly
115        120        125
Asp Ile Val Phe Thr Gly Leu Ser Gln Lys Val Lys Lys Tyr Val Arg
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Val Ser Gln Asp Thr Pro Ser Ser Val Ile Tyr His Leu Met Thr Gln
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His Trp Gly Leu Asp Val Pro Asn Leu Leu Ile Ser Val Thr Gly Gly
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Ala Lys Asn Phe Asn Met Lys Pro Arg Leu Lys Ser Ile Phe Arg Arg
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Gly Leu Val Lys Val Ala Gln Thr Thr Gly Ala Trp Ile Ile Thr Gly
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Gly Ser His Thr Gly Val Met Lys Gln Val Gly Glu Ala Val Arg Asp
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225        230        235        240
Val Ala Thr Trp Gly Thr Val His Arg Arg Glu Gly Leu Ile His Pro
245        250        255
Thr Gly Ser Phe Pro Ala Glu Tyr Ile Leu Asp Glu Asp Gly Gln Gly
260        265        270
Asn Leu Thr Cys Leu Asp Ser Asn His Ser His Phe Ile Leu Val Asp
275        280        285
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Leu Glu Lys Phe Ile Ser Glu Gln Thr Lys Glu Arg Gly Gly Val Ala
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Val	Glu	Gly	Ser	Gly	Arg	Val	Ala	Asp	Val	Ile	Ala	Gln	Val	Ala	Asn	355	360	365
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Val	Phe	Phe	Gln	Glu	Met	Phe	Glu	Thr	Phe	Thr	Glu	Ser	Arg	Ile	Val	385	390	395
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Thr	Val	Phe	Arg	Glu	Gly	Lys	Asp	Gly	Gln	Gln	Asp	Val	Asp	Val	Ala	420	425	430
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His	Glu	Asn	Trp	Asp	His	Gln	Leu	Lys	Leu	Ala	Val	Ala	Trp	Asn	Arg	450	455	460
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Tyr	Pro	Arg	Pro	Arg	His	Asn	Asp	Arg	Leu	Arg	Leu	Leu	Leu	Pro	Val	580	585	590
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Pro	Glu	Gln	Lys	Ile	Glu	Asp	Ile	Ser	Asn	Lys	Val	Asp	Ala	Met
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Val	Asp	Leu	Leu	Asp	Leu	Asp	Pro	Leu	Lys	Arg	Ser	Gly	Ser	Met
	1160					1165					1170			
Glu	Gln	Arg	Leu	Ala	Ser	Leu	Glu	Glu	Gln	Val	Ala	Gln	Thr	Ala
	1175					1180					1185			
Arg	Ala	Leu	His	Trp	Ile	Val	Arg	Thr	Leu	Arg	Ala	Ser	Gly	Phe
	1190					1195					1200			
Ser	Ser	Glu	Ala	Asp	Val	Pro	Thr	Leu	Ala	Ser	Gln	Lys	Ala	Ala
	1205					1210					1215			
Glu	Glu	Pro	Asp	Ala	Glu	Pro	Gly	Gly	Arg	Lys	Lys	Thr	Glu	Glu
	1220					1225					1230			
Pro	Gly	Asp	Ser	Tyr	His	Val	Asn	Ala	Arg	His	Leu	Leu	Tyr	Pro
	1235					1240					1245			

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Asn	Cys	Pro	Val	Thr	Arg	Phe	Pro	Val	Pro	Asn	Glu	Lys	Val	Pro
1250						1255					1260			
Trp	Glu	Thr	Glu	Phe	Leu	Ile	Tyr	Asp	Pro	Pro	Phe	Tyr	Thr	Ala
1265						1270					1275			
Glu	Arg	Lys	Asp	Ala	Ala	Ala	Met	Asp	Pro	Met	Gly	Asp	Thr	Leu
1280						1285					1290			
Glu	Pro	Leu	Ser	Thr	Ile	Gln	Tyr	Asn	Val	Val	Asp	Gly	Leu	Arg
1295						1300					1305			
Asp	Arg	Arg	Ser	Phe	His	Gly	Pro	Tyr	Thr	Val	Gln	Ala	Gly	Leu
1310						1315					1320			
Pro	Leu	Asn	Pro	Met	Gly	Arg	Thr	Gly	Leu	Arg	Gly	Arg	Gly	Ser
1325						1330					1335			
Leu	Ser	Cys	Phe	Gly	Pro	Asn	His	Thr	Leu	Tyr	Pro	Met	Val	Thr
1340						1345					1350			
Arg	Trp	Arg	Arg	Asn	Glu	Asp	Gly	Ala	Ile	Cys	Arg	Lys	Ser	Ile
1355						1360					1365			
Lys	Lys	Met	Leu	Glu	Val	Leu	Val	Val	Lys	Leu	Pro	Leu	Ser	Glu
1370						1375					1380			
His	Trp	Ala	Leu	Pro	Gly	Gly	Ser	Arg	Glu	Pro	Gly	Glu	Met	Leu
1385						1390					1395			
Pro	Arg	Lys	Leu	Lys	Arg	Ile	Leu	Arg	Gln	Glu	His	Trp	Pro	Ser
1400						1405					1410			
Phe	Glu	Asn	Leu	Leu	Lys	Cys	Gly	Met	Glu	Val	Tyr	Lys	Gly	Tyr
1415						1420					1425			
Met	Asp	Asp	Pro	Arg	Asn	Thr	Asp	Asn	Ala	Trp	Ile	Glu	Thr	Val
1430						1435					1440			
Ala	Val	Ser	Val	His	Phe	Gln	Asp	Gln	Asn	Asp	Val	Glu	Leu	Asn
1445						1450					1455			
Arg	Leu	Asn	Ser	Asn	Leu	His	Ala	Cys	Asp	Ser	Gly	Ala	Ser	Ile
1460						1465					1470			
Arg	Trp	Gln	Val	Val	Asp	Arg	Arg	Ile	Pro	Leu	Tyr	Ala	Asn	His
1475						1480					1485			
Lys	Thr	Leu	Leu	Gln	Lys	Ala	Ala	Ala	Glu	Phe	Gly	Ala	His	Tyr
1490						1495					1500			

<210> 13  
 <211> 1816  
 <212> PRT  
 <213> Caenorhabditis elegans

<400> 13

Met	Ile	Thr	Asp	Lys	Asn	Leu	Phe	Ser	Arg	Leu	Leu	Ile	Lys	Lys	Asn
1				5					10					15	
Pro	Ile	Arg	Met	His	Ser	Pro	Ser	Phe	Ser	Phe	Ser	Leu	Ile	Thr	Ser
			20					25					30		
Leu	Phe	Phe	Thr	Gln	Phe	Phe	Met	Phe	Gln	Leu	Ser	Ser	Met	Ala	Tyr
			35				40					45			
Phe	Phe	Leu	Thr	Leu	Ile	Ala	Gly	Val	Thr	His	Phe	Tyr	Phe	Pro	Glu
			50			55					60				
Lys	Leu	Leu	Gly	Lys	Ser	Glu	Asn	Leu	Asp	His	Arg	Tyr	Gln	Ser	Ser
65					70				75					80	
Glu	Gln	Lys	Val	Leu	Ile	Glu	Trp	Thr	Glu	Asn	Lys	Ala	Val	Ala	Glu
			85					90					95		
Ser	Leu	Arg	Ala	Asn	Ser	Val	Thr	Val	Glu	Glu	Asn	Glu	Ser	Glu	Arg
			100					105					110		
Glu	Thr	Glu	Thr	Gln	Thr	Lys	Arg	Arg	Arg	Lys	Lys	Gln	Arg	Ser	Thr
			115				120					125			
Ser	Ser	Asp	Lys	Ala	Pro	Leu	Asn	Ser	Ala	Pro	Arg	His	Val	Gln	Lys

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130		135		140
Phe Asp Trp Lys Asp	Met Leu His Leu Ala Asp	Ile Ser Gly Arg Lys		
145	150	155	160	
Arg Gly Asn Ser Thr	Thr Ser His Ser Gly	His Ala Thr Arg Ala Gly		
	165	170	175	
Ser Leu Lys Gly Lys	Asn Trp Ile Glu Cys	Arg Leu Lys Met Arg Gln		
	180	185	190	
Cys Ser Tyr Phe Val	Pro Ser Gln Arg Phe	Ser Glu Arg Cys Gly Cys		
	195	200	205	
Gly Lys Glu Arg Ser	Lys His Thr Glu Glu	Val Leu Glu Arg Ser Gln		
	210	215	220	
Asn Lys Asn His Pro	Leu Asn His Leu Thr	Leu Pro Gly Ile His Glu		
225	230	235	240	
Val Asp Thr Thr Asp	Ala Asp Ala Asp Asp	Asn Glu Val Asn Leu Thr		
	245	250	255	
Pro Gly Arg Trp Ser	Ile Gln Ser His Thr	Glu Ile Val Pro Thr Asp		
	260	265	270	
Ala Tyr Gly Asn Ile	Val Phe Glu Gly Thr	Ala His His Ala Gln Tyr		
	275	280	285	
Ala Arg Ile Ser Phe	Asp Ser Asp Pro Arg	Asp Ile Val His Leu Met		
	290	295	300	
Met Lys Val Trp Lys	Leu Lys Pro Pro Lys	Leu Ile Ile Thr Ile Asn		
305	310	315	320	
Gly Gly Leu Thr Lys	Phe Asp Leu Gln Pro	Lys Leu Ala Arg Thr Phe		
	325	330	335	
Arg Lys Gly Ile Met	Lys Ile Ala Lys Ser	Thr Asp Ala Trp Ile Ile		
	340	345	350	
Thr Ser Gly Leu Asp	Glu Gly Val Val Lys	His Leu Asp Ser Ala Leu		
	355	360	365	
His Ala Leu Glu Phe	Trp Ser Phe Gly Leu	Phe Trp Val Ile Gln Leu		
	370	375	380	
Asp Val Leu Leu Ala	His Ser Met Phe Ile	Pro Arg Gly Ser Leu Phe		
385	390	395	400	
Asp His Gly Asn His	Thr Ser Lys Asn His	Val Val Ala Ile Gly Ile		
	405	410	415	
Ala Ser Trp Gly Met	Leu Lys Gln Arg Ser	Arg Phe Val Gly Lys Asp		
	420	425	430	
Ser Thr Val Thr Tyr	Ala Thr Asn Val Phe	Asn Asn Thr Arg Leu Lys		
	435	440	445	
Glu Leu Asn Asp Asn	His Ser Tyr Phe Leu	Phe Ser Asp Asn Gly Thr		
	450	455	460	
Val Asn Arg Tyr Gly	Ala Glu Ile Ile Met	Arg Lys Arg Leu Glu Ala		
465	470	475	480	
Tyr Leu Ala Gln Gly	Asp Lys Lys Arg Ser	Ala Ile Pro Leu Val Cys		
	485	490	495	
Val Val Leu Glu Gly	Gly Ala Phe Thr Ile	Lys Met Val His Asp Tyr		
	500	505	510	
Val Thr Thr Ile Pro	Arg Ile Pro Val Ile	Val Cys Asp Gly Ser Gly		
	515	520	525	
Arg Ala Ala Asp Ile	Leu Ala Phe Ala His	Gln Ala Val Ser Gln Asn		
	530	535	540	
Gly Phe Leu Ser Asp	Asn Ile Arg Asn Gln	Leu Val Asn Ile Val Arg		
545	550	555	560	
Arg Ile Phe Gly Tyr	Asp Pro Lys Thr Ala	Gln Lys Leu Ile Lys Gln		
	565	570	575	
Ile Val Glu Cys Ser	Thr Asn Lys Ser Leu	Met Thr Ile Phe Arg Leu		
	580	585	590	
Gly Glu Ser Arg Glu	Asp Leu Asp His Val	Ile Met Ser Cys Leu		
	595	600	605	

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Leu	Lys	Gly	Gln	Asn	Leu	Ser	Pro	Pro	Glu	Gln	Leu	Gln	Leu	Ala	Leu		
610						615					620						
Ala	Trp	Asn	Arg	Ala	Asp	Ile	Ala	Arg	Thr	Glu	Ile	Phe	Ala	Asn	Gly		
625					630					635					640		
Thr	Glu	Trp	Thr	Thr	Gln	Asp	Leu	His	Asn	Ala	Met	Ile	Glu	Ala	Leu		
				645					650						655		
Ser	Asn	Asp	Arg	Ile	Asp	Phe	Val	His	Leu	Leu	Leu	Glu	Asn	Gly	Val		
			660					665					670				
Ser	Met	Gln	Lys	Phe	Leu	Thr	Tyr	Gly	Arg	Leu	Glu	His	Leu	Tyr	Asn		
		675					680					685					
Thr	Asp	Lys	Gly	Pro	Gln	Asn	Thr	Leu	Arg	Thr	Asn	Leu	Leu	Val	Asp		
	690					695					700						
Ser	Lys	His	His	Ile	Lys	Leu	Val	Glu	Val	Gly	Arg	Leu	Val	Glu	Asn		
705				710					715						720		
Leu	Met	Gly	Asn	Leu	Tyr	Lys	Ser	Asn	Tyr	Thr	Lys	Glu	Glu	Phe	Lys		
			725						730						735		
Asn	Gln	Tyr	Phe	Leu	Phe	Asn	Asn	Arg	Lys	Gln	Phe	Gly	Lys	Arg	Val		
		740						745					750				
His	Ser	Asn	Ser	Asn	Gly	Gly	Arg	Asn	Asp	Val	Ile	Gly	Pro	Ser	Gly		
		755					760					765					
Asp	Ala	Gly	Arg	Glu	Arg	Met	Ser	Ser	Met	Gln	Ile	Ser	Leu	Ile	Asn		
	770					775					780						
Asn	Ala	Arg	Asn	Ser	Ile	Ile	Ser	Leu	Phe	Asn	Gly	Gly	Gly	Arg	Lys		
785				790						795					800		
Arg	Glu	Ser	Asp	Asp	Glu	Asp	Asp	Phe	Ser	Asn	Leu	Glu	Glu	Glu	Ala		
			805					810							815		
Asn	Met	Asp	Phe	Thr	Phe	Arg	Tyr	Pro	Tyr	Ser	Asp	Leu	Met	Ile	Trp		
		820					825						830				
Ala	Val	Leu	Thr	Lys	Arg	Gln	Lys	Met	Ala	Lys	Leu	Met	Trp	Thr	His		
	835						840					845					
Gly	Glu	Glu	Gly	Met	Ala	Lys	Ala	Leu	Val	Ala	Ser	Arg	Leu	Tyr	Val		
	850					855					860						
Ser	Leu	Ala	Lys	Thr	Ala	Ser	Leu	Ala	Thr	Gly	Glu	Ile	Gly	Met	Ser		
865				870						875					880		
Gln	Asp	Phe	Thr	Glu	Phe	Ser	Asp	Glu	Phe	Ser	Glu	Leu	Ala	Val	Glu		
			885					890						895			
Val	Leu	Glu	Tyr	Cys	Thr	Lys	His	Gly	Arg	Asp	Gln	Thr	Leu	Arg	Leu		
	900							905					910				
Leu	Thr	Cys	Glu	Leu	Ala	Asn	Trp	Gly	Asp	Glu	Thr	Cys	Leu	Ser	Leu		
	915						920					925					
Ala	Ala	Asn	Asn	Gly	His	Arg	Lys	Phe	Leu	Ala	His	Pro	Cys	Cys	Gln		
	930					935					940						
Met	Leu	Leu	Ser	Asp	Leu	Trp	Gln	Gly	Gly	Leu	Leu	Met	Lys	Asn	Asn		
945				950						955					960		
Gln	Asn	Ser	Lys	Val	Leu	Thr	Cys	Leu	Ala	Ala	Pro	Pro	Leu	Ile	Phe		
			965						970						975		
Leu	Leu	Gly	Phe	Lys	Thr	Lys	Glu	Gln	Leu	Met	Leu	Gln	Pro	Lys	Thr		
		980					985						990				
Ala	Ala	Glu	His	Asp	Glu	Glu	Met	Ser	Asp	Ser	Glu	Met	Asn	Ser	Ala		
	995						1000						1005				
Glu	Asp	Thr	Asp	Thr	Ser	Ser	Asp	Ser	Ser	Ser	Asp	Ser	Asp	Asp			
	1010					1015						1020					
Ser	Asp	Glu	Glu	Asp	Ala	Lys	Leu	Arg	Ala	Gln	Ser	Leu	Ser	Ala			
	1025					1030						1035					
Asp	Gln	Pro	Leu	Ser	Ile	His	Arg	Leu	Val	Arg	Asp	Lys	Leu	Asn			
	1040					1045						1050					
Phe	Ser	Glu	Lys	Lys	Lys	Pro	Asp	Met	Gly	Ile	Ser	Arg	Ile	Val			
	1055					1060						1065					
Val	Ala	Pro	Pro	Ile	Val	Thr	Gly	Arg	Asn	Arg	Ala	Arg	Thr	Met			

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1070	Ser	Ile	Lys	Lys	Ser	Lys	1075	Lys	Asn	Val	Ile	Lys	1080	Pro	Pro	Ala	Cys
1085	Leu	Lys	Ile	Glu	Thr	Ser	1090	Asp	Asp	Asp	Glu	Gln	1095	Glu	Gln	Lys	Lys
1100	Ala	Thr	Glu	Met	Cys	Lys	1105	Ser	Thr	Phe	Phe	Asp	1110	Phe	Phe	Phe	Asp
1115	Phe	Pro	Tyr	Ile	Asn	Arg	1120	Thr	Gly	Lys	Arg	Gly	1125	Ser	Val	Ala	Val
1130	Ala	Met	Asn	His	Asp	Asp	1135	Met	Tyr	Ile	Asp	Pro	1140	Ser	Glu	Glu	Leu
1145	Asp	Thr	Gln	Thr	Arg	Gln	1150	Lys	Ser	Ser	Arg	Glu	1155	Phe	Ser	Ser	Ser
1160							1165						1170				
1175	Arg	Asn	Val	Thr	Val	Gln	1180	Val	Tyr	Thr	Gln	Arg	1185	Pro	Leu	Ser	Trp
1190	Lys	Lys	Lys	Ile	Met	Glu	1195	Phe	Tyr	Lys	Ala	Pro	1200	Ile	Thr	Thr	Tyr
1205	Trp	Leu	Trp	Phe	Phe	Ala	1210	Phe	Ile	Trp	Phe	Leu	1215	Ile	Leu	Leu	Thr
1220	Tyr	Asn	Leu	Leu	Val	Lys	1225	Thr	Gln	Arg	Ile	Ala	1230	Ser	Trp	Ser	Glu
1235	Trp	Tyr	Val	Phe	Ala	Tyr	1240	Ile	Phe	Val	Trp	Thr	1245	Leu	Glu	Ile	Gly
1250	Arg	Lys	Val	Val	Ser	Thr	1255	Ile	Met	Met	Asp	Thr	1260	Ser	Lys	Pro	Val
1265	Leu	Lys	Gln	Leu	Arg	Val	1270	Phe	Phe	Phe	Gln	Tyr	1275	Arg	Asn	Gly	Leu
1280	Leu	Ala	Phe	Gly	Leu	Leu	1285	Thr	Tyr	Leu	Ile	Ala	1290	Tyr	Phe	Ile	Arg
1295	Leu	Ser	Pro	Thr	Thr	Lys	1300	Thr	Leu	Gly	Arg	Ile	1305	Leu	Ile	Ile	Cys
1310	Asn	Ser	Val	Ile	Trp	Ser	1315	Leu	Lys	Leu	Val	Asp	1320	Tyr	Leu	Ser	Val
1325	Gln	Gln	Gly	Leu	Gly	Pro	1330	Tyr	Ile	Asn	Ile	Val	1335	Ala	Glu	Met	Ile
1340	Pro	Thr	Met	Ile	Pro	Leu	1345	Cys	Val	Leu	Val	Phe	1350	Ile	Thr	Leu	Tyr
1355	Ala	Phe	Gly	Leu	Leu	Arg	1360	Gln	Ser	Ile	Thr	Tyr	1365	Pro	Tyr	Glu	Asp
1370	Trp	His	Trp	Ile	Leu	Val	1375	Arg	Asn	Ile	Phe	Leu	1380	Gln	Pro	Tyr	Phe
1385	Met	Leu	Tyr	Gly	Glu	Val	1390	Tyr	Ala	Ala	Glu	Ile	1395	Asp	Thr	Cys	Gly
1400	Asp	Glu	Ile	Trp	Gln	Thr	1405	His	Glu	Asp	Glu	Asn	1410	Ile	Pro	Ile	Ser
1415	Met	Leu	Asn	Val	Thr	His	1420	Glu	Thr	Cys	Val	Pro	1425	Gly	Tyr	Trp	Ile
1430	Ala	Pro	Val	Gly	Leu	Thr	1435	Val	Phe	Met	Leu	Ala	1440	Thr	Asn	Val	Leu
1445	Leu	Met	Asn	Val	Met	Val	1450	Ala	Gly	Cys	Thr	Tyr	1455	Ile	Phe	Glu	Lys
1460	His	Ile	Gln	Ser	Thr	Arg	1465	Glu	Ile	Phe	Leu	Phe	1470	Glu	Arg	Tyr	Gly
1475	Gln	Val	Met	Glu	Tyr	Glu	1480	Ser	Thr	Pro	Trp	Leu	1485	Pro	Pro	Pro	Phe
1490	Thr	Ile	Ile	Tyr	His	Val	1495	Ile	Trp	Leu	Phe	Lys	1500	Leu	Ile	Lys	Ser
	Ser	Ser	Arg	Met	Phe	Glu		Arg	Lys	Asn	Leu	Phe		Asp	Gln	Ser	Leu

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1505	1510	1515
Lys Leu Phe Leu Ser Pro Asp Glu Met Glu Lys Val His Thr Phe		
1520	1525	1530
Glu Glu Glu Ser Val Glu Asp Met Lys Arg Glu Thr Glu Lys Lys		
1535	1540	1545
Asn Leu Ser Ser Asn Asp Glu Arg Ile His Arg Thr Ala Glu Arg		
1550	1555	1560
Thr Asp Ala Ile Leu Asn Arg Val Ser His Leu Thr Gln Leu Glu		
1565	1570	1575
Phe Thr Leu Lys Glu Glu Ile Arg Glu Leu Glu His Lys Met Lys		
1580	1585	1590
Asn Met Asp Ser Arg His Lys Glu Gln Met Asn Leu Met Leu Asp		
1595	1600	1605
Met Asn Lys Lys Leu Gly Lys Phe Ile Ser Gly Lys Tyr Lys Arg		
1610	1615	1620
Gly Ser Phe Gly Gly Ser Gly Ser Asp Gly Gly Gly Gly Ser Ser		
1625	1630	1635
Asp Asn Ser Lys Leu Glu Pro Asn Asn Ser Val Pro Met Ile Thr		
1640	1645	1650
Val Asp Gly Pro Ser Pro Ile Gly Ser Arg Arg Thr Ser Gly Gln		
1655	1660	1665
Tyr Leu Lys Arg Asp Ser Leu Gln Ala Lys Lys Lys Ile Thr Glu		
1670	1675	1680
Asn Arg Arg Ser Ser Leu Glu Gln Pro Lys Ile Pro Ser Ile Gln		
1685	1690	1695
Phe Asn Leu Met Glu Asp Gln Asp Glu Ser Ala Ala Glu Ser Ala		
1700	1705	1710
Thr Glu Glu Val Ser Ile Ser Ile Pro Val Pro Gln Met Arg Val		
1715	1720	1725
Arg Gln Val Thr Glu Ser Asp Lys Ser Asp Leu Ser Glu Asp Asp		
1730	1735	1740
Leu Ile Thr Arg Glu Asp Ala Pro Pro Thr Ser Ile Asn Leu Pro		
1745	1750	1755
Arg Gly Pro Arg Arg His Ala Leu Tyr Ser Thr Ile Ala Asp Ala		
1760	1765	1770
Ile Glu Thr Glu Asp Asp Phe Tyr Ala Asp Ser Pro Val Pro Met		
1775	1780	1785
Pro Met Thr Pro Val Gln Pro Ala Asp Gly Ser Phe Phe Gly Glu		
1790	1795	1800
Asn Asp Ser Arg Tyr Gln Arg Asp Asp Ser Asp Tyr Glu		
1805	1810	1815

&lt;210&gt; 14

&lt;211&gt; 1387

&lt;212&gt; PRT

&lt;213&gt; Caenorhabditis elegans

&lt;400&gt; 14

Met Arg Lys Ser Arg Arg Val Arg Lys Leu Val Arg His Ala Ser Leu	
1	5 10 15
Ile Glu Asn Ile Arg His Arg Thr Ser Ser Phe Leu Arg Leu Leu Asn	
	20 25 30
Ala Pro Arg Asn Ser Met Cys Asn Ala Asn Thr Val His Ser Ile Ser	
	35 40 45
Ser Phe Arg Ser Asp His Leu Ser Arg Lys Ser Thr His Lys Phe Leu	
	50 55 60
Asp Asn Pro Asn Leu Phe Ala Ile Glu Leu Thr Glu Lys Leu Ser Pro	
65	70 75 80
Pro Trp Ile Glu Asn Thr Phe Glu Lys Arg Glu Cys Ile Arg Phe Ala	

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				85					90					95	
Ala	Leu	Pro	Lys 100	Asp	Pro	Glu	Arg	Cys 105	Gly	Cys	Gly	Arg	Pro 110	Leu	Ser
Ala	His	Thr 115	Pro	Ala	Ser	Thr	Phe 120	Phe	Ser	Thr	Leu	Pro 125	Val	His	Leu
Leu	Glu	Lys 130	Glu	Gln	Gln	Thr 135	Trp	Thr	Ile	Ala	Asn 140	Asn	Thr	Gln	Thr
Ser 145	Thr	Thr	Asp	Ala 150	Phe	Gly	Thr	Ile	Val	Phe 155	Gln	Gly	Gly	Ala	His 160
Ala	His	Lys	Ala 165	Gln	Tyr	Val	Arg	Leu	Ser	Tyr	Asp	Ser	Glu	Pro	Leu
Asp	Val	Met 180	Tyr	Leu	Met	Glu	Lys	Val 185	Trp	Gly	Leu	Glu	Ala	Pro	Arg
Leu	Val	Ile 195	Thr	Val	His	Gly	Gly 200	Met	Ser	Asn	Phe	Glu 205	Leu	Glu	Glu
Arg	Leu	Gly 210	Arg	Leu	Phe	Arg 215	Lys	Gly	Met	Leu	Lys 220	Ala	Ala	Gln	Thr
Thr 225	Gly	Ala	Trp	Ile 230	Ile	Thr	Ser	Gly	Leu	Asp 235	Ser	Gly	Val	Val	Arg 240
His	Val	Ala 245	Lys	Ala	Leu	Asp	Glu	Ala 250	Gly	Ile	Ser	Ala	Arg	Met	Arg
Ser	Gln	Ile 260	Val	Thr	Ile	Gly	Ile	Ala 265	Pro	Trp	Gly	Val	Ile	Lys	Arg
Lys	Glu	Arg 275	Leu	Ile	Arg	Gln	Asn 280	Glu	His	Val	Tyr	Tyr 285	Asp	Val	His
Ser	Leu	Ser 290	Val	Asn	Ala	Asn 295	Val	Gly	Ile	Leu	Asn 300	Asp	Arg	His	Ser
Tyr 305	Phe	Leu	Leu	Ala 310	Asp	Asn	Gly	Thr	Val	Gly 315	Arg	Phe	Gly	Ala	Asp 320
Leu	His	Leu	Arg 325	Gln	Asn	Leu	Glu	Asn 330	His	Ile	Ala	Thr	Phe	Gly	Cys 335
Asn	Gly	Arg 340	Lys	Val	Pro	Val	Val	Cys 345	Thr	Leu	Leu	Glu	Gly 350	Gly	Ile
Ser	Ser	Ile 355	Asn	Ala	Ile	His	Asp 360	Tyr	Val	Thr	Met	Lys 365	Pro	Asp	Ile
Pro	Ala	Ile 370	Val	Cys	Asp	Gly 375	Ser	Gly	Arg	Ala	Ala	Asp	Ile	Ile	Ser
Phe 385	Ala	Ala	Arg 390	Tyr	Ile	Asn	Ser	Asp	Gly	Thr 395	Phe	Ala	Ala	Glu	Val 400
Gly	Glu	Lys	Leu 405	Arg	Asn	Leu	Ile	Lys 410	Met	Val	Phe	Pro	Glu	Thr 415	Asp
Gln	Glu	Glu 420	Met	Phe	Arg	Lys	Ile	Thr 425	Glu	Cys	Val	Ile	Arg 430	Asp	Asp
Leu	Leu	Arg 435	Ile	Phe	Arg	Tyr	Gly 440	Gln	Glu	Glu	Glu	Glu 445	Asp	Val	Asp
Phe	Val	Ile 450	Leu	Ser	Thr	Val 455	Leu	Gln	Lys	Gln	Asn 460	Leu	Pro	Pro	Asp
Glu 465	Gln	Leu	Ala 470	Leu	Thr	Leu	Ser	Trp	Asn 475	Arg	Val	Asp	Leu	Ala	Lys 480
Ser	Cys	Leu	Phe 485	Ser	Asn	Gly	Arg	Lys 490	Trp	Ser	Ser	Asp	Val	Leu	Glu
Lys	Ala	Met 500	Asn	Asp	Ala	Leu	Tyr 505	Trp	Asp	Arg	Val	Asp	Phe 510	Val	Glu
Cys	Leu	Leu 515	Glu	Asn	Gly	Val 520	Ser	Met	Lys	Asn	Phe 525	Leu	Ser	Ile	Asn
Arg	Leu	Glu 530	Asn	Leu	Tyr 535	Asn	Met	Asp	Asp	Ile	Asn 540	Ser	Ala	His	Ser
Val 545	Arg	Asn	Trp 550	Met	Glu 555	Asn	Phe	Asp	Ser	Met 555	Asp	Pro	His	Thr	Tyr 560

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Leu	Thr	Ile	Pro	Met	Ile	Gly	Gln	Val	Val	Glu	Lys	Leu	Met	Gly	Asn		
				565					570					575			
Ala	Phe	Gln	Leu	Tyr	Tyr	Thr	Ser	Arg	Ser	Phe	Lys	Gly	Lys	Tyr	Asp		
			580					585					590				
Arg	Tyr	Lys	Arg	Ile	Asn	Gln	Ser	Ser	Tyr	Phe	His	Arg	Lys	Arg	Lys		
		595					600					605					
Ile	Val	Gln	Lys	Glu	Leu	Phe	Lys	Lys	Lys	Ser	Asp	Asp	Gln	Ile	Asn		
	610					615					620						
Asp	Asn	Glu	Glu	Glu	Asp	Phe	Ser	Phe	Ala	Tyr	Pro	Phe	Asn	Asp	Leu		
625					630					635					640		
Leu	Ile	Trp	Ala	Val	Leu	Thr	Ser	Arg	His	Gly	Met	Ala	Glu	Cys	Met		
				645					650					655			
Trp	Val	His	Gly	Glu	Asp	Ala	Met	Ala	Lys	Cys	Leu	Leu	Ala	Ile	Arg		
			660					665					670				
Leu	Tyr	Lys	Ala	Thr	Ala	Lys	Ile	Ala	Glu	Asp	Glu	Tyr	Leu	Asp	Val		
		675					680						685				
Glu	Glu	Ala	Lys	Arg	Leu	Phe	Asp	Asn	Ala	Val	Lys	Cys	Arg	Glu	Asp		
	690					695					700						
Ala	Ile	Glu	Leu	Leu	Asp	Gln	Cys	Tyr	Arg	Ala	Asp	His	Asp	Arg	Thr		
705					710					715					720		
Leu	Arg	Leu	Leu	Arg	Met	Glu	Leu	Pro	His	Trp	Gly	Asn	Asn	Asn	Cys		
				725					730						735		
Leu	Ser	Leu	Ala	Val	Leu	Ala	Asn	Thr	Lys	Thr	Phe	Leu	Ala	His	Pro		
			740					745					750				
Cys	Cys	Gln	Ile	Leu	Leu	Ala	Glu	Leu	Trp	His	Gly	Ser	Leu	Lys	Val		
		755					760					765					
Arg	Ser	Gly	Ser	Asn	Val	Arg	Val	Leu	Thr	Ala	Leu	Ile	Cys	Pro	Pro		
	770					775					780						
Ala	Ile	Leu	Phe	Met	Ala	Tyr	Lys	Pro	Lys	His	Ser	Lys	Thr	Ala	Arg		
785					790					795					800		
Leu	Leu	Ser	Glu	Glu	Thr	Pro	Glu	Gln	Leu	Pro	Tyr	Pro	Arg	Glu	Ser		
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Ile	Thr	Ser	Thr	Thr	Ser	Asn	Arg	Tyr	Arg	Tyr	Ser	Lys	Gly	Pro	Glu		
			820					825					830				
Glu	Gln	Lys	Glu	Thr	Leu	Leu	Glu	Lys	Gly	Ser	Tyr	Thr	Lys	Lys	Val		
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Thr	Ile	Ile	Ser	Ser	Arg	Lys	Asn	Ser	Gly	Val	Ala	Ser	Val	Tyr	Gly		
	850					855					860						
Ser	Ala	Ser	Ser	Met	Met	Phe	Lys	Arg	Glu	Pro	Gln	Leu	Asn	Lys	Phe		
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Glu	Arg	Phe	Arg	Ala	Phe	Tyr	Ser	Ser	Pro	Ile	Thr	Lys	Phe	Trp	Ser		
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Trp	Cys	Ile	Ala	Phe	Leu	Ile	Phe	Leu	Thr	Thr	Gln	Thr	Cys	Ile	Leu		
			900					905					910				
Leu	Leu	Glu	Thr	Ser	Leu	Lys	Pro	Ser	Lys	Tyr	Glu	Trp	Ile	Thr	Phe		
		915					920					925					
Ile	Tyr	Thr	Val	Thr	Leu	Ser	Val	Glu	His	Ile	Arg	Lys	Leu	Met	Thr		
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Ser	Glu	Gly	Ser	Arg	Ile	Asn	Glu	Lys	Val	Lys	Val	Phe	Tyr	Ala	Lys		
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Trp	Tyr	Asn	Ile	Trp	Thr	Ser	Ala	Ala	Leu	Leu	Phe	Phe	Leu	Val	Gly		
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Tyr	Gly	Phe	Arg	Leu	Val	Pro	Met	Tyr	Arg	His	Ser	Trp	Gly	Arg	Val		
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Leu	Leu	Ser	Phe	Ser	Asn	Val	Leu	Phe	Tyr	Met	Lys	Ile	Phe	Glu	Tyr		
		995					1000					1005					
Leu	Ser	Val	His	Pro	Leu	Leu	Gly	Pro	Tyr	Ile	Gln	Met	Ala	Ala			
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Lys	Met	Val	Trp	Ser	Met	Cys	Tyr	Ile	Cys	Val	Leu	Leu	Leu	Val			



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1025	1030	1035
Pro Leu Met Ala Phe Gly Val	Asn Arg Gln Ala Leu	Thr Glu Pro
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Asn Val Lys Asp Trp His Trp	Leu Leu Val Arg Asn	Ile Phe Tyr
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Lys Pro Tyr Phe Met Leu Tyr	Gly Glu Val Tyr Ala	Gly Glu Ile
1070	1075	1080
Asp Thr Cys Gly Asp Glu Gly	Ile Arg Cys Phe Pro	Gly Tyr Phe
1085	1090	1095
Ile Pro Pro Leu Leu Met Val	Ile Phe Leu Leu Val	Ala Asn Ile
1100	1105	1110
Leu Leu Leu Asn Leu Leu Ile	Ala Ile Phe Asn Asn	Ile Tyr Asn
1115	1120	1125
Asp Ser Ile Glu Lys Ser Lys	Glu Ile Trp Leu Phe	Gln Arg Tyr
1130	1135	1140
Gln Gln Leu Met Glu Tyr His	Asp Ser Pro Phe Leu	Pro Pro Pro
1145	1150	1155
Phe Ser Ile Phe Ala His Val	Tyr His Phe Ile Asp	Tyr Leu Tyr
1160	1165	1170
Asn Leu Arg Arg Pro Asp Thr	Lys Arg Phe Arg Ser	Glu His Ser
1175	1180	1185
Ile Lys Leu Ser Val Thr Glu	Asp Glu Met Lys Arg	Ile Gln Asp
1190	1195	1200
Phe Glu Glu Asp Cys Ile Asp	Thr Leu Thr Arg Ile	Arg Lys Leu
1205	1210	1215
Lys Leu Asn Thr Lys Glu Pro	Leu Ser Val Thr Asp	Leu Thr Glu
1220	1225	1230
Leu Thr Cys Gln Arg Val His	Asp Leu Met Gln Glu	Asn Phe Leu
1235	1240	1245
Leu Lys Ser Arg Val Tyr Asp	Ile Glu Thr Lys Ile	Asp His Ile
1250	1255	1260
Ser Asn Ser Ser Asp Glu Val	Val Gln Ile Leu Lys	Asn Lys Lys
1265	1270	1275
Leu Ser Gln Asn Phe Ala Ala	Ser Ser Leu Ser Leu	Pro Asp Thr
1280	1285	1290
Ser Ile Glu Val Pro Lys Ile	Thr Lys Thr Leu Ile	Asp Cys His
1295	1300	1305
Leu Ser Pro Val Ser Ile Glu	Asp Arg Leu Ala Thr	Arg Ser Pro
1310	1315	1320
Leu Leu Ala Asn Leu Gln Arg	Asp His Thr Leu Arg	Lys Leu Pro
1325	1330	1335
Thr Trp Glu Thr Ser Thr Ala	Ser Thr Ser Ser Phe	Glu Phe Val
1340	1345	1350
Phe Tyr Phe Thr Arg His Glu	Gly Asn Glu Asn Lys	Tyr Glu Phe
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Lys Lys Leu Glu Lys Gly Gly	Phe Trp Arg Asn Asn	Tyr Val Ile
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Ser Trp Arg Leu		
1385		

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 <212> PRT  
 <213> Caenorhabditis elegans

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 Trp Cys Thr Met Glu Ser Asp Glu Leu Gly Val Thr Arg Tyr Leu Gln

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Ser	Lys	Gly	Gly	Asp	Gln	Val	Pro	Pro	Thr	Ser	Thr	Thr	Thr	Gly	Gly
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Ala	Gly	Gly	Asp	Gly	Asn	Ala	Val	Pro	Thr	Thr	Ser	Gln	Ala	Gln	Ala
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Gln	Thr	Phe	Asn	Ser	Gly	Arg	Gln	Thr	Thr	Gly	Met	Ser	Ser	Gly	Asp
65					70					75				80	
Arg	Leu	Asn	Glu	Asp	Val	Ser	Ala	Thr	Ala	Asn	Ser	Ala	Gln	Leu	Val
				85					90				95		
Leu	Pro	Thr	Pro	Leu	Phe	Asn	Gln	Met	Arg	Phe	Thr	Glu	Ser	Asn	Met
			100					105					110		
Ser	Leu	Asn	Arg	His	Asn	Trp	Val	Arg	Glu	Thr	Phe	Thr	Arg	Arg	Glu
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Cys	Ser	Arg	Phe	Ile	Ala	Ser	Ser	Arg	Asp	Leu	His	Lys	Cys	Gly	Cys
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Gly	Arg	Thr	Arg	Asp	Ala	His	Arg	Asn	Ile	Pro	Glu	Leu	Thr	Ser	Glu
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Phe	Leu	Arg	Gln	Lys	Arg	Ser	Val	Ala	Ala	Leu	Glu	Gln	Gln	Arg	Ser
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Ile	Ser	Asn	Val	Asn	Asp	Asp	Ile	Asn	Thr	Gln	Asn	Met	Tyr	Thr	Lys
		180						185					190		
Arg	Gly	Ala	Asn	Glu	Lys	Trp	Ser	Leu	Arg	Lys	His	Thr	Val	Ser	Leu
	195						200					205			
Ala	Thr	Asn	Ala	Phe	Gly	Gln	Val	Glu	Phe	Gln	Gly	Gly	Pro	His	Pro
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Tyr	Lys	Ala	Gln	Tyr	Val	Arg	Val	Asn	Phe	Asp	Thr	Glu	Pro	Ala	Tyr
225					230					235					240
Ile	Met	Ser	Leu	Phe	Glu	His	Val	Trp	Gln	Ile	Ser	Pro	Pro	Arg	Leu
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Ile	Ile	Thr	Val	His	Gly	Gly	Thr	Ser	Asn	Phe	Asp	Leu	Gln	Pro	Lys
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Leu	Ala	Arg	Val	Phe	Arg	Lys	Gly	Leu	Leu	Lys	Ala	Ala	Ser	Thr	Thr
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Gly	Ala	Trp	Ile	Ile	Thr	Ser	Gly	Cys	Asp	Thr	Gly	Val	Val	Lys	His
	290					295					300				
Val	Ala	Ala	Ala	Leu	Glu	Gly	Ala	Gln	Ser	Ala	Gln	Arg	Asn	Lys	Ile
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Val	Cys	Ile	Gly	Ile	Ala	Pro	Trp	Gly	Leu	Leu	Lys	Lys	Arg	Glu	Asp
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Phe	Ile	Gly	Gln	Asp	Lys	Thr	Val	Pro	Tyr	Tyr	Pro	Ser	Ser	Ser	Lys
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Gly	Arg	Phe	Thr	Gly	Leu	Asn	Asn	Arg	His	Ser	Tyr	Phe	Leu	Leu	Val
	355						360					365			
Asp	Asn	Gly	Thr	Val	Gly	Arg	Tyr	Gly	Ala	Glu	Val	Ile	Leu	Arg	Lys
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Arg	Leu	Glu	Met	Tyr	Ile	Ser	Gln	Lys	Gln	Lys	Ile	Phe	Gly	Gly	Thr
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Arg	Ser	Val	Pro	Val	Val	Cys	Val	Val	Leu	Glu	Gly	Gly	Ser	Cys	Thr
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Ile	Arg	Ser	Val	Leu	Asp	Tyr	Val	Thr	Asn	Val	Pro	Arg	Val	Pro	Val
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Val	Val	Cys	Asp	Gly	Ser	Gly	Arg	Ala	Ala	Asp	Leu	Leu	Ala	Phe	Ala
		435					440					445			
His	Gln	Asn	Val	Thr	Glu	Asp	Gly	Leu	Leu	Pro	Asp	Asp	Ile	Arg	Arg
	450					455					460				
Gln	Val	Leu	Leu	Leu	Val	Glu	Thr	Thr	Phe	Gly	Cys	Ser	Glu	Ala	Ala
465					470					475					480
Ala	His	Arg	Leu	Leu	His	Glu	Leu	Thr	Val	Cys	Ala	Gln	His	Lys	Asn
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Leu	Leu	Thr	Ile	Phe	Arg	Leu	Gly	Glu	Gln	Gly	Glu	His	Asp	Val	Asp		
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His	Ala	Ile	Leu	Thr	Ala	Leu	Leu	Lys	Gly	Gln	Asn	Leu	Ser	Ala	Ala		
		515						520				525					
Asp	Gln	Leu	Ala	Leu	Ala	Leu	Ala	Trp	Asn	Arg	Val	Asp	Ile	Ala	Arg		
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Ser	Asp	Val	Phe	Ala	Met	Gly	His	Glu	Trp	Pro	Gln	Ala	Ala	Leu	His		
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Asn	Ala	Met	Met	Glu	Ala	Leu	Ile	His	Asp	Arg	Val	Asp	Phe	Val	Arg		
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Leu	Leu	Leu	Glu	Gln	Gly	Ile	Asn	Met	Gln	Lys	Phe	Leu	Thr	Ile	Ser		
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Arg	Leu	Asp	Glu	Leu	Tyr	Asn	Thr	Asp	Lys	Gly	Pro	Pro	Asn	Thr	Leu		
		595					600						605				
Phe	Tyr	Ile	Val	Arg	Asp	Val	Val	Arg	Val	Arg	Gln	Gly	Tyr	Arg	Phe		
	610						615					620					
Lys	Leu	Pro	Asp	Ile	Gly	Leu	Val	Ile	Glu	Lys	Leu	Met	Gly	Asn	Ser		
625					630					635					640		
Tyr	Gln	Cys	Ser	Tyr	Thr	Thr	Ser	Glu	Phe	Arg	Asp	Lys	Tyr	Lys	Gln		
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Arg	Met	Lys	Arg	Val	Lys	His	Ala	Gln	Lys	Lys	Ala	Met	Gly	Val	Phe		
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Ser	Ser	Arg	Pro	Ser	Arg	Thr	Gly	Ser	Gly	Ile	Ala	Ser	Arg	Gln	Ser		
		675					680						685				
Thr	Glu	Gly	Met	Gly	Gly	Val	Gly	Gly	Gly	Ser	Ser	Val	Ala	Gly	Val		
	690					695						700					
Phe	Gly	Asn	Ser	Phe	Gly	Asn	Gln	Asp	Pro	Pro	Leu	Asp	Pro	His	Val		
705					710					715					720		
Asn	Arg	Ser	Ala	Leu	Ser	Gly	Ser	Arg	Ala	Leu	Ser	Asn	His	Ile	Leu		
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Trp	Arg	Ser	Ala	Phe	Arg	Gly	Asn	Phe	Pro	Ala	Asn	Pro	Met	Arg	Pro		
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Pro	Asn	Leu	Gly	Asp	Ser	Arg	Asp	Cys	Gly	Ser	Glu	Phe	Asp	Glu	Glu		
		755					760					765					
Leu	Ser	Leu	Thr	Ser	Ala	Ser	Asp	Gly	Ser	Gln	Thr	Glu	Pro	Asp	Phe		
	770					775					780						
Arg	Tyr	Pro	Tyr	Ser	Glu	Leu	Met	Ile	Trp	Ala	Val	Leu	Thr	Lys	Arg		
785					790					795					800		
Gln	Asp	Met	Ala	Met	Cys	Met	Trp	Gln	His	Gly	Glu	Glu	Ala	Met	Ala		
				805					810					815			
Lys	Ala	Leu	Val	Ala	Cys	Arg	Leu	Tyr	Lys	Ser	Leu	Ala	Thr	Glu	Ala		
			820					825					830				
Ala	Glu	Asp	Tyr	Leu	Glu	Val	Glu	Ile	Cys	Glu	Glu	Leu	Lys	Lys	Tyr		
		835					840					845					
Ala	Glu	Glu	Phe	Arg	Ile	Leu	Ser	Leu	Glu	Leu	Leu	Asp	His	Cys	Tyr		
	850					855					860						
His	Val	Asp	Asp	Ala	Gln	Thr	Leu	Gln	Leu	Leu	Thr	Tyr	Glu	Leu	Ser		
865					870					875					880		
Asn	Trp	Ser	Asn	Glu	Thr	Cys	Leu	Ala	Leu	Ala	Val	Ile	Val	Asn	Asn		
				885					890					895			
Lys	His	Phe	Leu	Ala	His	Pro	Cys	Cys	Gln	Ile	Leu	Leu	Ala	Asp	Leu		
		900					905						910				
Trp	His	Gly	Gly	Leu	Arg	Met	Arg	Thr	His	Ser	Asn	Ile	Lys	Val	Val		
		915					920						925				
Leu	Gly	Leu	Ile	Cys	Pro	Pro	Phe	Ile	Gln	Met	Leu	Glu	Phe	Lys	Thr		
	930					935					940						
Arg	Glu	Glu	Leu	Leu	Asn	Gln	Pro	Gln	Thr	Ala	Ala	Glu	His	Gln	Asn		
945					950					955					960		

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1400	1405	1410
Met Glu Tyr Glu Ser Thr	Pro Phe Leu Pro Pro	Pro Leu Thr Pro
1415	1420	1425
Leu Tyr His Gly Val Leu	Ile Leu Gln Phe Val	Arg Thr Arg Leu
1430	1435	1440
Ser Cys Ser Lys Ser Gln	Glu Arg Asn Pro Ile	Leu Leu Leu Lys
1445	1450	1455
Ile Ala Glu Leu Phe Leu	Asp Asn Asp Gln Ile	Glu Lys Leu His
1460	1465	1470
Asp Phe Glu Glu Asp Cys	Met Glu Asp Leu Ala	Arg Gln Lys Leu
1475	1480	1485
Asn Glu Lys Asn Thr Ser	Asn Glu Gln Arg Ile	Leu Arg Ala Asp
1490	1495	1500
Ile Arg Thr Asp Gln Ile	Leu Asn Arg Leu Ile	Asp Leu Gln Ala
1505	1510	1515
Lys Glu Ser Met Gly Arg	Asp Val Ile Asn Asp	Val Glu Ser Arg
1520	1525	1530
Leu Ala Ser Val Glu Lys	Ala Gln Asn Glu Ile	Leu Glu Cys Val
1535	1540	1545
Arg Ala Leu Leu Asn Gln	Asn Asn Ala Pro Thr	Ala Ile Gly Arg
1550	1555	1560
Cys Phe Ser Pro Ser Pro	Asp Pro Leu Val Glu	Thr Ala Asn Gly
1565	1570	1575
Thr Pro Gly Pro Leu Leu	Leu Lys Leu Pro Gly	Thr Asp Pro Ile
1580	1585	1590
Leu Glu Glu Lys Asp His	Asp Ser Gly Glu Asn	Ser Asn Ser Leu
1595	1600	1605
Pro Pro Gly Arg Ile Arg	Arg Asn Arg Thr Ala	Thr Ile Cys Gly
1610	1615	1620
Gly Tyr Val Ser Glu Glu	Arg Asn Met Met Leu	Leu Ser Pro Lys
1625	1630	1635
Pro Ser Asp Val Ser Gly	Ile Pro Gln Gln Arg	Leu Met Ser Val
1640	1645	1650
Thr Ser Met Asp Pro Leu	Pro Leu Pro Leu Ala	Lys Leu Ser Thr
1655	1660	1665
Met Ser Ile Arg Arg Arg	His Glu Glu Tyr Thr	Ser Ile Thr Asp
1670	1675	1680
Ser Ile Ala Ile Arg His	Pro Glu Arg Arg Ile	Arg Asn Asn Arg
1685	1690	1695
Ser Asn Ser Ser Glu His	Asp Glu Ser Ala Val	Asp Ser Glu Gly
1700	1705	1710
Gly Gly Asn Val Thr Ser	Ser Pro Arg Lys Arg	Ser Thr Arg Asp
1715	1720	1725
Leu Arg Met Thr Pro Ser	Ser Gln Val Glu Glu	Ser Thr Ser Arg
1730	1735	1740
Asp Gln Ile Phe Glu Ile	Asp His Pro Glu His	Glu Glu Asp Glu
1745	1750	1755
Ala Gln Ala Asp Cys Glu	Leu Thr Asp Val Ile	Thr Glu Glu Glu
1760	1765	1770
Asp Glu Glu Glu Asp Asp	Glu Glu Asp Asp Ser	His Glu Arg His
1775	1780	1785
His Ile His Pro Arg Arg	Lys Ser Ser Arg Gln	Asn Arg Gln Pro
1790	1795	1800
Ser His Thr Leu Glu Thr	Asp Leu Ser Glu Gly	Glu Glu Val Asp
1805	1810	1815
Pro Leu Asp Val Leu Lys	Met Lys Glu Leu Pro	Ile Ile His Gln
1820	1825	1830
Ile Leu Asn Glu Glu Glu	Gln Ala Gly Ala Pro	His Ser Thr Pro
1835	1840	1845

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Val Ile Ala Ser Pro Ser Ser Ser Arg Ala Asp Leu Thr Ser Gln  
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 Lys Cys Ser Asp Val  
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 <213> Mus musculus

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 ggctgcaggc cgcggagggtg gaggaggagc cgctgccctt ccggagtcg ccccgtagg 180  
 agaatgtccc agaaatcctg gatagagagc actttgacca agagggagtg tgtatatatt 240  
 ataccaagct ccaaagaccc tcacagatgt cttccaggat gtcagatttg tcagcaactt 300  
 gtcagatggt tctgtggtcg tttggtcaag caacatgcat gctttactgc aagtcttgcc 360  
 atgaaatact cagatgtgaa attgggtgaa cactttaacc aggcaataga agaatggtct 420  
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 ggttctcat 489

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 Cys Gln Ile Cys Gln Gln Leu Val Arg Cys Phe Cys Gly Arg Leu Val  
 35 40 45  
 Lys Gln His Ala Cys Phe Thr Ala Ser Leu Ala Met Lys Tyr Ser Asp  
 50 55 60  
 Val Lys Leu Gly Glu His Phe Asn Gln Ala Ile Glu Glu Trp Ser Val  
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 Glu Lys His Thr Glu Gln Ser Pro Thr Asp Ala Tyr Gly Val Ile Asn  
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 Phe Gln Gly Gly Ser His  
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 <221> Unsure

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 ctagtggctc tcacctgctt cctcctgggc gtgggctgcc ggctgacccc gggtttgtac 180  
 cacctgggccc gcactgtcct ctgcatcgac ttcattggtt tcacgggtgcg gctgcttcac 240  
 atcttcacgg tcaacaaaca gctggggccc aagatcgta tcgtgagcaa gatgatgaag 300  
 gacgtgttct tcttcctctt cttcctcggc gtgtggctgg tagctatggg ttggggccacg 360  
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 Gln Cys Asp Leu Val Ala Leu Thr Cys Phe Leu Leu Gly Val Gly Cys  
 35 40 45  
 Arg Leu Thr Pro Gly Leu Tyr His Leu Gly Arg Thr Val Leu Cys Ile  
 50 55 60  
 Asp Phe Met Val Phe Thr Val Arg Leu Leu His Ile Phe Thr Val Asn  
 65 70 75 80  
 Lys Gln Leu Gly Pro Lys Ile Val Ile Val Ser Lys Met Met Lys Asp  
 85 90 95  
 Val Phe Phe Phe Leu Phe Phe Leu Gly Val Trp Leu Val Ala Met Gly  
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 Ile Leu Xaa  
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<210> 20  
 <211> 389

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<212> DNA  
 <213> Homo sapiens

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 atttgttaga cacagagata gcatggattt acagagggtt aaagaaacat caacaagat 180  
 aaaaatacta tccaataaca atactttctga aaacactttg aaacgagtga gttctcttgc 240  
 tggatttact gactgtcaca gaacttccat tctgtttcat tcaaaacgag aaaagatcag 300  
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 <213> Homo sapiens

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 <213> Homo sapiens

<220>  
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 <223> any amino acid

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&lt;400&gt; 24

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 35 40 45  
 Ala Val Glu Leu Leu Glu Gln Ser Phe Arg Gln Asp Glu Thr Met Ala  
 50 55 60  
 Met Lys Leu Leu Thr Tyr Glu Leu Lys Asn Trp Ser Asn Ser Thr Cys  
 65 70 75 80  
 Leu Lys Leu Ala Val Ser Ser Arg Leu Arg Pro Phe Val Ala His Thr  
 85 90 95  
 Cys Thr Gln Met Leu Leu Ser Asp Met Trp Met Gly Arg Leu Asn Met  
 100 105 110  
 Arg Lys Asn Ser Trp Tyr Lys Val Ile Leu Ser Ile Leu Val Pro Pro  
 115 120 125  
 Ala Ile Leu Leu Leu Glu Tyr Lys Thr Lys Ala Glu Met Ser His Ile  
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 Pro Gln Ser Gln Asp Ala His Gln Met Thr Met Asp Asp Ser Glu Asn  
 145 150 155 160  
 Asn Phe Gln Asn Ile Thr Glu Glu Ile Pro Met Glu Val Phe Lys Glu  
 165 170 175  
 Val Arg Ile Leu Asp Ser Asn Glu Gly Lys Asn Glu Met Glu Ile Gln  
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 Met Lys Ser Lys Lys Leu Pro Ile Thr Arg Lys Phe Tyr Ala Phe Tyr  
 195 200 205  
 His Ala Pro Ile Val Lys Phe Trp Phe Asn Thr Leu Ala Tyr Leu Gly  
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 Pro Ser Val Gln Glu Trp Ile Val Ile Ala Tyr Ile Phe Thr Tyr Ala  
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 Ile Glu Lys Val Arg Glu Ile Phe Met Ser Glu Ala Gly Lys Val Asn  
 260 265 270  
 Gln Lys Ile Lys Val Trp Phe Ser Asp Tyr Phe Asn Ile Ser Asp Thr  
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 Gly Lys Met Val Ala Asn Met Phe Tyr Ile Val Val Ile Met Ala Leu  
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 370 375 380  
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 420 425 430  
 Pro Phe Leu Gln Ala Val Tyr Leu Phe Val Gln Tyr Ile Ile Met Val  
 435 440 445  
 Asn Leu Leu Ile Ala Phe Phe Asn Asn Val Tyr Leu Gln Val Lys Ala

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Tyr His Glu Lys Pro Val Leu Pro Pro Pro Leu Ile Ile Leu Ser His					
	485		490		495
Ile Val Ser Leu Phe Cys Cys Ile Cys Lys Arg Arg Lys Lys Asp Lys					
	500		505		510
Thr Ser Asp Gly Pro Lys Leu Phe Leu Thr Glu Glu Asp Gln Lys Lys					
	515		520		525
Leu His Asp Phe Glu Glu Gln Cys Val Glu Met Tyr Phe Asn Glu Lys					
	530		535		540
Asp Asp Lys Phe His Ser Gly Ser Glu Glu Arg Ile Arg Val Thr Phe					
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Glu Arg Val Glu Gln Met Cys Ile Gln Ile Lys Glu Val Gly Asp Arg					
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Val Asn Tyr Ile Lys Arg Ser Leu Gln Ser Leu Asp Ser Gln Ile Gly					
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His Leu Gln Asp Leu Ser Ala Leu Thr Val Asp Thr Leu Lys Thr Leu					
	595		600		605
Thr Ala Gln Lys Ala Ser Glu Ala Ser Lys Val His Asn Glu Ile Thr					
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Arg Glu Leu Ser Ile Ser Lys His Leu Ala Gln Asn Leu Ile Asp Asp					
625	630		635		640
Gly Pro Val Arg Pro Ser Val Trp Lys Lys His Gly Val Val Asn Thr					
	645		650		655
Leu Ser Ser Ser Leu Pro Gln Gly Asp Leu Glu Ser Asn Asn Pro Phe					
	660		665		670
His Cys Asn Ile Leu Met Lys Asp Asp Lys Asp Pro Gln Cys Asn Ile					
	675		680		685
Phe Gly Gln Asp Leu Pro Ala Val Pro Gln Arg Lys Glu Phe Asn Phe					
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Pro Glu Ala Gly Ser Ser Ser Gly Ala Leu Phe Pro Ser Ala Val Ser					
705	710		715		720
Pro Pro Glu Leu Arg Gln Arg Leu His Gly Val Glu Leu Leu Lys Ile					
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Phe Asn Lys Asn Gln Lys Leu Gly Ser Ser Ser Thr Ser Ile Pro His					
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Cys Ser Lys Ala Thr Glu Gly Asp Asn Xaa Glu Phe Gly Ala Phe Val					
785	790		795		800
Gly His Arg Asp Ser Met Asp Leu Gln Arg Phe Lys Glu Thr Ser Asn					
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Lys Ile Lys Ile Leu Ser Asn Asn Asn Thr Ser Glu Asn Thr Leu Lys					
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Glu Asp Thr His Glu Val Asp Ser Lys Ala Ala Leu Ile Pro Asp Trp					
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Leu Asn Gly Leu Thr Ser Pro Phe Lys Pro Ala Met Asp Thr Asn Tyr					
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Tyr Tyr Ser Ala Val Glu Arg Asn Asn Leu Met Arg Leu Ser Gln Ser					
	915		920		925

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35          40          45
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85          90          95
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Glu Lys His Thr Glu Gln Ser Pro Thr Asp Ala Tyr Gly Val Ile Asn
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Phe Gln Gly Gly Ser His Ser Tyr Arg Ala Lys Tyr Val Arg Leu Ser
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1820	Ile Ile Phe Pro Gln	1825	Asp Glu Pro Ser Asp	1830	Leu Asn Leu Gln
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<212> PRT
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35          40          45
Met Glu Asp Ala Phe Gly Ala Ala Val Val Thr Val Trp Asp Ser Asp
50          55          60
Ala His Thr Thr Glu Lys Pro Thr Asp Ala Tyr Gly Glu Leu Asp Phe
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Val Leu Gln Thr Trp Leu Gln Asp Leu Leu Arg Arg Gly Leu Val Arg

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Val Val Arg Asn Arg Asp Thr Leu Ile Asn Pro Lys Gly Ser Phe Pro				
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Ala Arg Tyr Arg Trp Arg Gly Asp Pro Glu Asp Gly Val Gln Phe Pro				
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Val Leu Leu Leu Leu Ile Asp Gly Asp Glu Lys Met Leu Thr Arg Ile				
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Cys Leu Leu Leu Arg Val Met Ala Arg Leu Glu Pro Asp Ala Glu Glu				
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&lt;211&gt; 1104

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 32

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Asp Leu Ser Tyr Ser Glu Ser Asp Leu Val Asn Phe Ile Gln Ala Asn
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Phe Lys Lys Arg Glu Cys Val Phe Phe Thr Lys Asp Ser Lys Ala Thr

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Lys Lys Gly Lys Tyr Ile Arg Leu Ser Cys Asp Thr Asp Ala Glu Ile					
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Leu Tyr Glu Leu Leu Thr Gln His Trp His Leu Lys Thr Pro Asn Leu					
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Val Ile Ser Val Thr Gly Gly Ala Lys Asn Phe Ala Leu Lys Pro Arg					
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Met Arg Lys Ile Phe Ser Arg Leu Ile Tyr Ile Ala Gln Ser Lys Gly					
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Ala Trp Ile Leu Thr Gly Gly Thr His Tyr Gly Leu Met Lys Tyr Ile					
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Gly Glu Val Val Arg Asp Asn Thr Ile Ser Arg Ser Ser Glu Glu Asn					
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Ile Val Ala Ile Gly Ile Ala Ala Trp Gly Met Val Ser Asn Arg Asp					
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Thr Leu Ile Arg Asn Cys Asp Ala Glu Gly Tyr Phe Leu Ala Gln Tyr					
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Leu Met Asp Asp Phe Thr Arg Asp Pro Leu Cys Ile Leu Asp Asn Asn					
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His Thr His Leu Leu Leu Val Asp Asn Gly Cys His Gly His Pro Thr					
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Thr Ile Gln Asp Ser Asn Tyr Gly Gly Lys Ile Pro Ile Val Cys Phe					
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Ala Gln Gly Gly Gly Lys Glu Thr Leu Lys Ala Ile Asn Thr Ser Ile					
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Ser Thr Ser Glu Gln Asp Lys Asp Asn Trp Asn Gly Gln Leu Lys Leu					
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Ala Leu Ile Lys Asp Arg Pro Lys Phe Val Arg Leu Phe Leu Glu Asn					
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Phe Ser Asn His Phe Ser Thr Leu Val Tyr Arg Asn Leu Gln Ile Ala					
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Lys Asn Ser Tyr Asn Asp Ala Leu Leu Thr Phe Val Trp Lys Leu Val					
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Lys	Lys	Leu	Leu	Trp	Tyr	Tyr	Val	Ala	Phe	Phe	Thr	Ser	Pro	Phe	Val
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